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The Role of Intelligence Teams in Facilitating Change in Organizational Beliefs

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AALTO UNIVERSITY **ABSTRACT OT MASTER'S THESIS**

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Abstract

It has been long emphasized that companies must interpret the environment they operate in and develop an understanding of what it signifies for future action. Today, it is typical for companies to deploy specialized intelligence teams with the purpose of scanning information from the environment to serve as a basis for interpretation and decision making.

This thesis provides evidence that the role of intelligence teams can go beyond what has been previously suggested. Firstly, the teams are able to evaluate the consistency between the environment and the beliefs held of the environment in the organization, and secondly, the teams direct organizational attention to the inconsistencies they observe and subsequently facilitate change in beliefs through the use of concrete evidence. Intelligence teams can, therefore, operate as *update mechanisms* and revise unsound beliefs of the environment.

Moreover, these findings shed light on the processes that regulate beliefs in organizations and beliefs concerning the environment in particular. Furthermore, the organizational conditions surrounding the teams are described and factors that either support or complicate the teams' actions are identified.

Keywords Corporate intelligence, organizational beliefs, organizational interpretation

AALTO-YLIOPISTO **DIPLOMITYÖN TIIVISTELMÄ**

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Tiivistelmä

Yritysten pitää seurata ja tulkita toimintaympäristöään ja ymmärtää mitä tuo ympäristö tarkoittaa niiden toiminnan kannalta. Voidakseen tulkita ympäristöään ja tehdä päätöksiä niiden täytyy ensin kerätä tietoa, ja nykyään on tavallista, että yritykset hyödyntävät tiedonkeruuseen erikoistuneita yksiköitä.

Tässä työssä esitetään, että tiedonkeruutiimeillä voi olla merkittävämpi rooli kuin aikaisemmin on ajateltu. Tiimeillä on kyky huomata, milloin organisaatiossa on uskomuksia, jotka ovat ristiriidassa ympäristön kanssa. Tiimit ohjaavat organisaation huomion näihin seikkoihin ja edesauttavat muutosta uskomuksissa esittämällä todistusaineistoa. Näin niiden voidaan ajatella toimivan *päivitysmekanismeina* ja auttavan organisaatioita ylläpitämään tarkan käsityksen ympäristöstä.

Tämä löydös on myös esimerkki siitä, miten organisaatioiden sisäiset prosessit muokkaavat uskomuksia. Lisäksi työssä käsitellään olosuhteita, kuten kulttuuria ja toimintatapoja, joiden vaikutuksen alla tiimit työskentelevät ja jotka edesauttavat tai vaikeuttavat tiimien toimintaa.

Avainsanat Tiedonkeruu yrityksissä, uskomukset organisaatioissa, toimintaympäristön tulkitseminen

Foreword

I want to thank assistant professor Timo Vuori for his guidance and comments on this work. Furthermore, a special thanks to M-Brain Oy and Joost Drieman, Hans Kjellberg, Saku Oikarinen and Antti Lapinleimu for their support. This thesis would not have come to fruition without the encouragement and contribution of these people.

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1 Introduction

Understanding their external environments is imperative to all businesses. They face today a volatile world where environmental changes occur at a higher frequency and at a greater magnitude than ever before. Maintaining an accurate and meaningful perception of their environments allows businesses to judge what they should do next, and adapt to the changes they confront. In order to develop a conception of the environment, they must collect information from a variety of sources. There is, however, an abundancy of information and businesses must be selective in what information they gather. Managers are bombarded with more information than they can ever handle, and many companies deploy specialized intelligence teams with the focus of collecting and digesting information for managers to incorporate in their decision making. In other words, these groups produce intelligence – information that can be applied to direct the future actions of the company.

The role of intelligence teams as a unit responsible of disseminating information to managers introduces specific challenges, especially when it comes to detecting and communicating changes in the environment that present novelty to the organization. Generally speaking, the unexplored potential of new knowledge makes it inherently attractive, but it is also susceptible to doubt, since its applicability is yet to be confirmed, and establishing the relevance of new knowledge is the main concern of anyone who wishes to communicate it to others (Schulz, 2001).

One of the challenges of communicating new knowledge is individuals' propensity to judge relevance on sentiment and belief rather than rationality (Nag & Gioia, 2012). Furthermore, communicating personal inferences is usually not accompanied by exhaustive presentation of the actual evidence that they are drawn from. The recipients of such inferences, therefore, are incapable of verifying them on their own and must repose trust in the person who has made the inferences in order to accept them. (Hammond, 1994) Hence, intelligence teams should not only be able to judge and communicate the relevance of new

knowledge but should also have management's confidence on their side in order to achieve it.

Previous literature (Ghoshal & Westney, 1991; Gilad, 1989; Lenz & Engledow, 1986; Stubbart, 1982) has raised concern of the efficacy of intelligence operations, citing a lack of organizational influence and unclear impact in decision making processes. Gilad (1989), for example, reminds that managers gather intelligence by themselves in an informal fashion, and that this activity is a direct rival of intelligence teams in companies' internal exchange of information. He argues that the purpose of intelligence teams is not to replace individual managers' scanning efforts, but to complement them. He does recognize that this is no straightforward task, since managers tend to rely on their own information sources, and continues to argue that teams willing to achieve this objective will have to prove themselves useful by looking at unorthodox sources and establish close communication ties that allow them both to understand managerial needs and to deliver their viewpoints effectively.

Stubbart (1982) has stated that such teams are hopelessly out of touch with the reality of the businesses they intend to service and that they can hardly contribute anything meaningful from a managerial point of view. He does, however, maintain that the fundamental goal of the teams is worthy of pursuing, and implies that the shortcomings can be attributable to organizational designs that fail to address the teams' needs, and calls for further investigation of the conditions that would allow the teams to operate more effectively. Organizational design does, after all, greatly affect what information will reach managers (Hammond, 1994). Lauzen (1995, p. 199) concurs with these views and states that isolated departments operating in disconnection of the everyday conduct of business are "poorly equipped to translate data into intelligence".

The findings of Ghoshal and Westney (1991) on competitive intelligence units, scanning units that specifically focus on gathering intelligence on competitors, support these concerns outlined above. They interviewed the intelligence units and the units' clients, managers who would make use of the intelligence produced by the units, at three large US companies. The study found that the most

common problems identified by the intelligence units can be labeled as “managerial culture”, while the most common problems identified by managers could be described as a “lack of relevance of outputs to action” (1991, p. 20). These findings highlight the complicated relationship between intelligence units and management and the difficulty of organizing a team that would deliver meaningful intelligence.

Since the fundamental purpose of intelligence teams is to convey information and knowledge of the external environment to managers, it is important to understand the relationship between these two parties. However, this relationship as it unfolds in everyday co-operation and interaction has not garnered much attention in research. The objective of this thesis is to explore modern intelligence teams in regard to these human processes.

2 Literature Review

2.1 The premises of information gathering

During the 20th century, Western societies gradually shifted from an industrial age dominated by capital – the assets used to produce goods and to finance enterprise – to a post-capitalist age where knowledge and information are the crucial resources for economic activity. Telecommunications, information technology and health care are all industries that have taken central roles in modern economies by having their businesses centered on the application of knowledge. Meanwhile, traditional industries that have continued to prosper have done so because they have managed to rethink themselves. The steel industry, for example, found new success after organizing itself on new production principles and the banking industry transformed into selling information in addition to collecting interest. (Drucker, 1993)

A fundamental change in how we think of companies coincided with the shift described above. Scholars of the early 20th century expected them to maximize their economic benefit through rational decisions based on perfect information (Rosen, 1997). Furthermore, early theories implied that information is somehow readily at their disposal (Cyert & March, 1963). These attributes suggested that companies are in possession of complete knowledge and make decisions by computing an optimal course of action whenever they need.

Later research has focused on the actual processes inside companies, and human cognition and behavior were found instrumental to decision making. A core idea behind these traits is called *bounded rationality*, which refers to the limited capacity of the human mind. In contrast to early beliefs, it was established that companies are not able to predict the consequences of their decisions accurately, and knowledge of the circumstances in which decisions are made does not flow to them automatically and in full detail. In fact, companies have to search for information by themselves and get by with an incomplete understanding of the world. (Gavetti, Greve, Levinthal, & Ocasio, 2012)

Information technology and the Internet enable information to move so rapidly and so comprehensively that events spread and trigger reactions almost instantaneously anywhere in the world. Furthermore, people and products are more mobile than ever, any type of repetitive work is at risk of being automated and whole industries can be reorganized in global structuring. These conditions make an environment prone to change at an unprecedented scale. (Webster, 2005) The ability to adapt to external environments is crucial to the survival of all companies (Hambrick, 1982) and the increasing pace of change that companies have experienced in their environments has only highlighted the fact (Choudhury & Sampler, 1997; Lauzen, 1995).

Companies are dependent on their external environment in many ways, and the environment is considered to be one of the most important factors that influence organizational attributes including structure, internal processes and decision making. Research suggests that companies tend to create a fit between themselves and the characteristics of the environment. (Daft, Sormunen, & Parks, 1988) They can align their capabilities with the environment and achieve a dynamic balance, where change in the environment is met with their companies' ability to change. To achieve such a balance is the task of companies' strategy. (Porter, 1991)

Companies do formulate strategies in the plans they intend to carry out, but these plans might never be realized for a variety of reasons. Unexpected changes or misjudgments, for example, can render them useless in practice. However, companies must take actions in their struggle for survival, and a company can be thought to display a strategy in the thread of consistency that connects one decision to another, be it a result of conscious planning or decisions made on the spot when circumstances so demand. Mintzberg (1978, p. 934) summarizes this idea when he describes strategy as a "pattern in a stream of decisions". (Mintzberg, 1978) The underlying logic that explains these patterns is determined by cognitive frameworks that embody the knowledge and experience managers have accumulated of the business environment (Narayanan, Zane, & Kemmerer, 2011).

According to Mintzberg (1978), managers' task is to mediate between two forces: the way their company exists and operates now, and the external environment that introduces change at an unpredictable rate. The challenge is to achieve a sense of stability and order inside the company but still maintain a readiness for change at the same time. A company typically establishes itself through a consistent behavior for a certain period of time, only to be forced to adapt to a change in the environment. This is called a point of strategic change, when the consistency that the company has displayed in the past has to be changed in response to a shift in the environment. However, a company can create a response to a change only if it acquires information of it first (Hambrick, 1982). Research suggests that incorporating information of changes in the environment into strategic decision making contributes to companies' survival in the long-term (Lenz & Engledow, 1986).

2.2 Scanning and interpretation

There is no universal description of the environment, but one useful generalization is to think of it as all the factors outside the company that concern decision making. The environment is typically thought to consist of two layers, which both can be further divided into various sectors. The first environmental layer is called the task environment, and it consists of sectors that the company has direct contacts with, such as their customers, suppliers and competitors. The second layer is called the general environment, which is thought to affect the company indirectly, and includes the economic, political and social sectors. (Elenkov, 1997) The placement of these sectors into the two environmental layers may differ between industries. For example, the banking industry could include the regulatory sector into the task environment due to a tight relationship with governmental agencies. (Daft et al., 1988)

Companies engage in *scanning,* which is the process of collecting data from the environment for managers (Daft & Weick, 1984). This scanning is a prerequisite for interpreting the environment, which in turn is a central issue when constructing a strategy for the future (Nag & Gioia, 2012). The objective of scanning is to

help managers reduce the uncertainty they experience when they cannot understand the environment or assess future events (Elenkov, 1997). In effect, this uncertainty prevents them from identifying opportunities and problems in the environment and makes the company vulnerable (Daft et al., 1988). Failure in detecting changes in the environment and responding to them may lead to a decrease in organizational performance (Elenkov, 1997).

According to Daft et al. (1988), scanning activities are initiated in sectors that pose strategic uncertainty, and scanning efforts are typically not distributed equally across all environmental sectors. A sector is perceived uncertain when the company thinks it does not have sufficient information to guide its actions (Elenkov, 1997). Perceived uncertainty is influenced by the complexity of the environment and the rate at which the environment changes. Complex environments display a large number of diverse events and are therefore difficult to grasp, and a high rate of change results in rapid shifts in events and makes accurate information difficult to obtain. Perceived uncertainty alone isn't enough to draw attention towards an environmental sector, managers must also consider the sector important to the attainment of organizational goals. The most important sectors are thought to affect companies' operation and performance directly. (Daft et al., 1988)

From a managerial point of view, information is acquired through personal or impersonal sources. Personal sources refer to direct human contact in the form of conversation, whereas impersonal include a variety of written documentations, like reports, memos and managerial information systems. Personal sources convey rich content and subtleties, many of which are difficult to articulate in written form and emerge more easily through dialog. Furthermore, conversation enables immediate feedback and is especially effective in facilitating understanding. Impersonal sources have the advantage of providing tangible references on external events, and are used for systematic and periodic reporting. (Daft et al., 1988)

Another distinction is made in whether the information originates internally or externally to the company. Internal information sources include all the documen-

tation and discussions with other managers and employees concerning the environment. Of course, the actual information concerns the external environment, but internal information pertains to such information that is specifically processed and delivered to managers by some part of the company itself. External information sources exist outside the boundaries of the company and commonly refer to peers in other companies, information services and news. This information reaches the manager directly, and unlike internal information, is considered free of distortion that processing inside the company produces (Daft et al., 1988)

Daft et al. (1988) have found that strategic uncertainty affects both the frequency at which environmental sectors are scanned and the sources through which chief executives gather information. An increase in the uncertainty of a sector results in an increase in scanning frequency, because information concerning the sector has become more valuable to the company. Consequently, the limited resources available to scanning are directed to sectors where uncertainty is perceived to be greatest. The increase in uncertainty is also followed by favoring personal sources over impersonal ones. A plausible explanation for this is the difficulty of obtaining data under ambiguous circumstances. Furthermore, an interesting observation was that scanning frequency increased through internal and external sources at equal magnitudes, signaling no preference in either one in managers.

Previous literature has also addressed the effect of organizational culture on environmental scanning behavior in companies. Qiu (2008), for example, concluded that a culture of market orientation – a persistent effort of satisfying customer needs above all else – leads to proactive scanning behavior in managers. Lauzen (1995) found that a participative culture characterized by collaboration and exchange of information is likely to be accompanied by formal environmental scanning procedures. She argues that such organizations value information, and that this appreciation is reflected in an institutionalized approach in scanning, which manifests itself in meetings, written reports and focus groups. However, these studies only address the behavior of managers, not specialized intelligence teams.

Initially, everything a company can perceive in the environment is data (von Krogh, Roos, & Slocum, 1994); *interpretation* is "the process by which managers translate data into knowledge and understanding about the environment" (Daft & Weick, 1984, p. 291). How data is interpreted is determined by cognitive frameworks called schemas that enable us to make sense of incoming data and plan our actions in the environment. The foundation of these frameworks is in previously acquired knowledge and experience. (Nag & Gioia, 2012; Walsh, 1995)

Walsh (1995, p. 281) describes a schema as "a mental template that an individual imposes on an information environment to give it form and meaning… in a way that allows subsequent interpretation and action". In a more general sense, these frameworks characterize our thinking when we encounter something new and judge what is important to us. Furthermore, being able to interpret data requires knowledge that is capable of handling it, and it is not uncommon to leave data unprocessed due to a lack of knowledge. (von Krogh et al., 1994)

Organizational interpretation is the process in which top managers develop a shared understanding of data. When this understanding is put to use in the concrete actions that the company takes, further data concerning the environment is created through feedback mechanisms which then feed new interpretation and action. Cycles likes this where the company makes use of its interpretation in new actions and then reflects the outcomes of those actions to further the understanding of the environment are called organizational learning. (Daft & Weick, 1984) Figure 1 below illustrates the relationship between the three concepts of scanning, interpretation and learning.

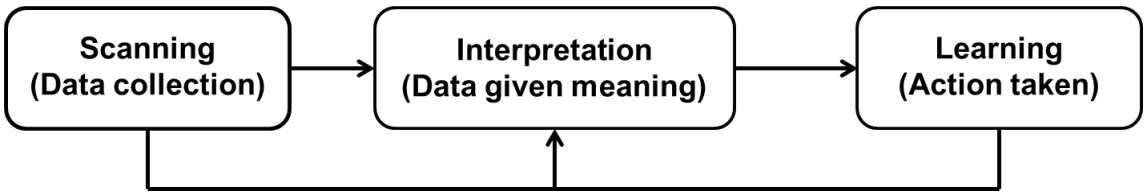

Figure 1 Scanning, interpretation and learning by Daft & Weick (1984)

Daft and Weick (1984) provide a general description of companies' scanning and interpretation processes. They propose that the nature of these processes depends on two dimensions: (1) managers' beliefs of how well the environment can be analyzed and (2) how extensively the company intrudes into the environment. Managerial beliefs of the environment are a product of their own experience and the characteristics of the environment. Environments that managers think can be explained by breaking them down into concrete objects and relationships between them are perceived analyzable, whereas environments that are difficult to reach and subject to change and ambiguity are considered unanalyzable. The extent to which companies behave intrusively and explore the environment for new discoveries is higher in competitive and problematic environments that pose threats and force a company to do so in order to survive.

An assumption that the environment can be analyzed will typically lead to scanning activities characterized by systematic information gathering, rationalizing and a general sense of alertness. In contrast, if the environment is thought to be unanalyzable, scanning will take an unsystematic approach and rely more on personal networks and subjective judgement. Companies that behave in an intrusive manner will engage in research and learn by trial and error. Passive companies that merely stand their ground will take the environment as it is, settling for a role of an observer and capture whatever information happens to reach them. (Daft & Weick, 1984)

These two dimensions can be combined to form four modes of interpretation a company can take. Companies that believe that their environment is analyzable but do not actively intrude into the environment engage in a mode called *conditioned viewing*. The company believes that the environment can be understood objectively and it doesn't pose threats. Passive behavior and a lack of threats have conditioned the company to the environment in the sense that it can rely on established procedures and routinely produced reports and documentation in its scanning activities. However, these procedures and routines have once been developed, but the company has found it satisfactory to rely on them alone, and it doesn't see it necessary to expand its activities any further. Therefore, scan-

ning activities are limited to existing practices and the interpretations the company makes tend to lie within familiar boundaries. (Daft & Weick, 1984)

A company that simultaneously believes the environment is analyzable and actively intrudes into the environment engages in a mode called *discovering*. The underlying thinking of these companies is that the environment can be understood through scrutiny, and there is a correct course of action to be figured out. In contrast to conditioned viewing, the company takes active measures to further its understanding of the environment. It probes unanswered questions through market research and trend analyses in order to predict future outcomes and justify its interpretations. Formal reports are produced, not to meet periodic routines like in the case of conditioned viewing, but as a result of specialized inquiries. (Daft & Weick, 1984)

A third kind of company is one that intrudes into the environment but does not believe that the environment is analyzable; hence it has very few cues from the environment suggesting what to do but it has to keep itself active due to competitive pressures or other threats. A company like this engages in an interpretation mode called *enacting* and will take actions that it believes to produce results although there might not be concrete evidence to support the view. It is action oriented and relies on data that is produced through its own initiatives and collected by feedback mechanisms. It can, for example, introduce new products that it thinks will sell instead of focusing on products that have an existing demand in the market. These companies can shape their environment through their own actions rather than the other way round. They ignore conventional views and expectations and test and experiment novel solutions in an enterprising fashion. (Daft & Weick, 1984)

Finally, companies that don’t believe that the environment is analyzable nor intrude into the environment engage in *undirected viewing*. Similar to companies engaging in conditioned viewing, they are passive and do not have an urge for new discoveries, but the difference is in that they don’t rely on objective data because they believe such a thing doesn’t exist in an unanalyzable environment. Instead, they gather information through personal contacts without follow-

ing any particular plan and gather information whenever the opportunity presents itself. Unlike conditioned viewing, they don't rely on formal information systems and are more open to cues from varying sources. (Daft & Weick, 1984) Figure 2 below summarizes these four modes of interpretation and repeats the central characteristics of each of them.

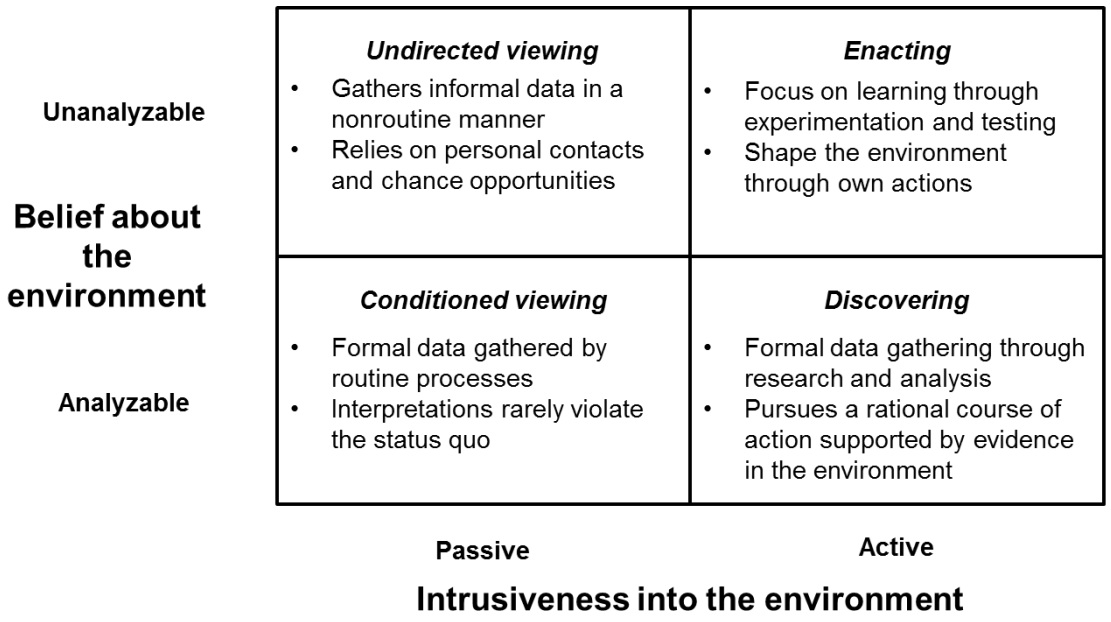

Figure 2 Modes of interpretation, modified from Daft & Weick (1984)

It is important to note that these modes of interpretation are not one-time decisions that the company takes. As described above, they depend on managers' beliefs of how well the environment can be analyzed and the characteristics of the environment itself, both of which can change over time. However, managerial beliefs can be persistent and they might not change without an organizational crisis or replacement of managers (Narayanan et al., 2011).

The main tenet of Daft and Weick (1984, p. 285) is that companies must operate as interpretation systems and "find ways to know the environment". Furthermore, they place interpretation to the heart of organizational existence. Interpretation is the process that formulates meaning, and without meaning, they argue, an organization is void of purpose and direction and therefore cannot thrive. The meaning of things, after all, does not explain what they are in an objective sense, but what they signify for human behavior (Peterson, 1999).

The manner in which Daft and Weick (1984) describe organizations to operate as such systems does, however, introduce a dichotomy. They recognize that the organization as a whole does engage in scanning the environment and in relaying information towards management, but they assume that interpretation is the sole responsibility of management, and most importantly, the responsibility of top management – "a relatively small group at the top of the organizational hierarchy… the point at which information converges and is interpreted for organization level action" (1984, p. 285).

While Daft and Weick's (1984) propositions have greatly influenced later research (Walsh, 1995), scholars have further developed the descriptions of how organizational interpretation occurs and have expanded the views of Daft and Weick in certain respects. Understanding interpretation as a process that takes place invariably at a single level of management, for example, is challenged. Furthermore, the simple claim that information would converge at the top level of management for organization-wide interpretation is an assumption that oversimplifies organizational reality. Later research has pictured interpretation as a more collaborative effort that joins forces across organizational levels (Beck & Plowman, 2009) and has examined how information flows through organizational hierarchies and how this affects organizational action in greater detail (Joseph & Ocasio, 2012).

2.3 Managerial cognition and decision making

One way to think of interpretation is to imagine that it produces a cognitive representation of the environment. The representation explains what the environment is and how it works. The way companies behave in respect to an environment depends on the representation they have of it. Companies gather data from the environment that enables them to deduce a representation, which then determines how the company reacts to stimuli originating from the environment. (Narayanan et al., 2011)

Cognitive representations like this are called *strategy frames* and they comprise the general logic with which managers make decisions. Essentially, strategy frames are schemas of their own kind in the sense that they develop specifically on the knowledge and experience managers have acquired of the business environment. (Narayanan et al., 2011) Nadkarni and Barr (2008, p. 1398) describe managers' cognitive representations as the result of "making sense of, learning from, and addressing the unique cognitive challenges in their operating environments". Learning through new experiences allows these interpretive schemas to evolve into more accurate representations of the environment (von Krogh et al., 1994).

However, it is quite possible for companies to operate on conceptions that reflect past environments instead of current ones (Nag & Gioia, 2012; von Krogh et al., 1994), and all companies should keep themselves attentive and challenge the way they think of the environment (Fahey & Narayanan, 1989). Walsh (1995) points out that while schemas allow managers to make sense of their environments, there is a danger of managers applying them in a dogmatic fashion, thereby compromising their ability to detect and deal with changes they are unfamiliar with. Similarly, von Krogh, Roos and Slocum (1994, p. 58) state that "what you know determines what you see".

Schemas allow us to operate effectively in known territory, but the moment we find ourselves in unknown territory, they cease to help us and we are confronted by stimuli we are unable to understand and we can experience uneasiness and anxiety as a result (Peterson, 1999). Eisenhardt (1989) reminds that managers' ability to act can be significantly impaired under uncertainty. She does, however, show that managers can benefit from working in concert with other executives that she calls counselors, experienced and knowledgeable individuals, who act as sounding boards for new ideas and as confidantes, helping managers deal with the adverse emotions involved in tense situations.

The way these cognitive representations are put to use can follow two logics. Companies that believe the environment is analyzable will follow a deterministic logic, whereas companies that believe it to be unanalyzable will follow a proac-

tive logic. A deterministic logic produces a behavioral pattern where the company observes the environment and acts in response to external events. These companies can be called environment-driven, as their strategies are shaped by the environment. A proactive logic produces a pattern where the company tries to influence the environment in pursuit of a belief of what the environment could be. The company cannot work out a reasonable course of action based on cues from the environment, and chooses to impart meaning on the environment through its own actions instead. These companies try to shape the environment through their strategies and are called interpretation-driven. (Nadkarni & Barr, 2008)

Furthermore, an important trait is that typically some of a representation's constituents are more pronounced in managers' thinking than others. This imbalance is referred to as attention focus, and it occurs because managers confront more information of the environment than they have the capacity to handle, which in turn leads them to pay attention to areas they believe to be most relevant, filtering out domains they deem unnecessary. This phenomenon explains what environmental events are taken into consideration and thought important enough to induce a response. (Nadkarni & Barr, 2008)

In addition, there are two underlying logics that explain what managers want to scan in the environment. *Backward-looking* scanning gathers data on matters that the company is familiar with; these matters are scanned because managers have established their importance through experience. *Forward-looking* scanning chooses subjects for data gathering through reasoning. (Narayanan et al., 2011) It focuses on matters managers find important because their understanding of the environment leads them to that conclusion (Gavetti & Levinthal, 2000).

Figure 3 below illustrates these two logics of scanning. Both of them can be thought to originate in the same strategy frame although they reflect two different aspects of it. Backward-looking scanning reflects how managers' previous experience tells them what to look at. Forward-looking scanning reflects the

cognitive representation of the environment that enables them to judge what to look at.

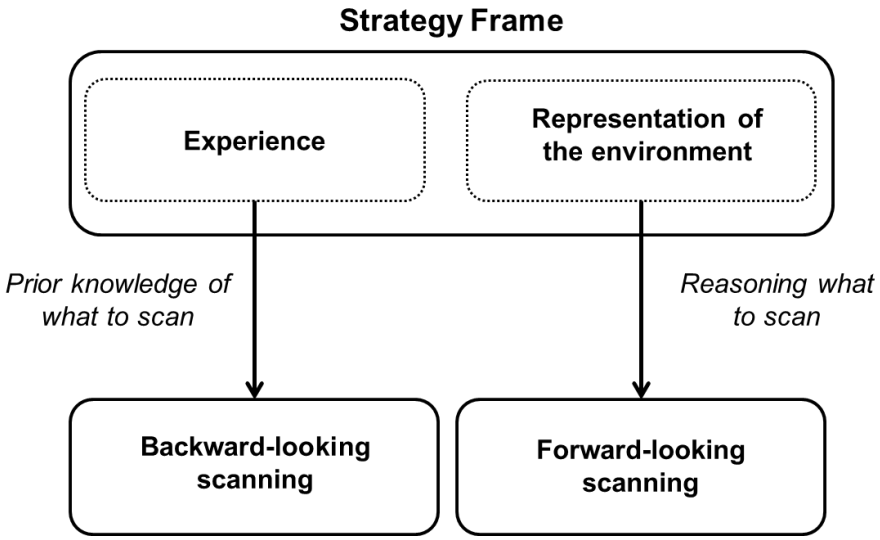

Figure 3 Backward- and forward-looking scanning

Strategy frames can be thought to expand the previously discussed concepts of scanning, interpretation and learning. Firstly, they govern what the company chooses to scan either through backward- or forward-looking scanning. Secondly, the interpretation process is what forms the strategy frames themselves when a representation of the environment is constructed on acquired data. Thirdly, strategy frames explain the actions companies take and are the underlying reference frame in the learning process. Both scanning and learning feed new interpretations that add to the strategy frame. Figure 4 illustrates these concepts and the relationships between them.

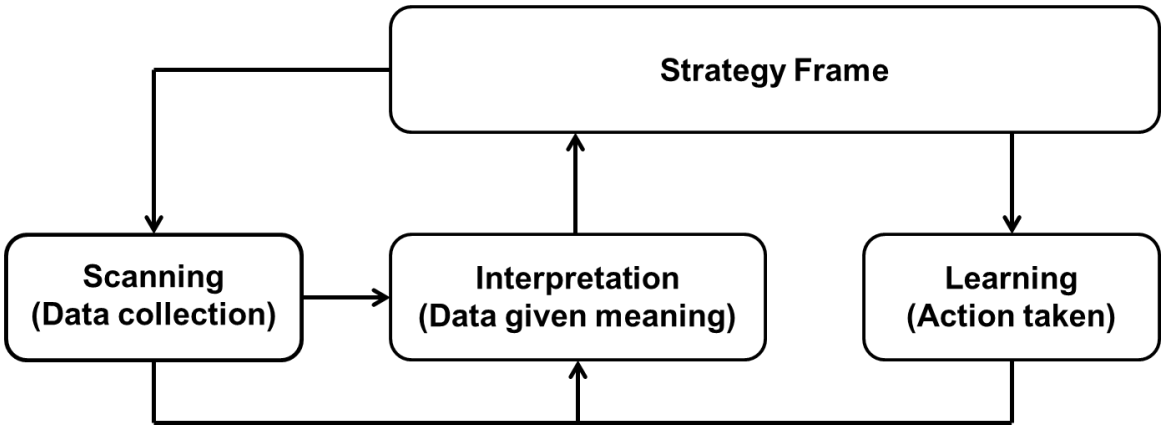

Figure 4 Strategy frames in respect to scanning, interpretation and learning

Due to bounded rationality, the cognitive representations that managers have developed of the environment are imperfect. They can be described as simplified models of the environment that enable managers to make reasonable decisions within the capacity of their own minds. Managers are incapable of envisioning all alternative courses of action available to the company and of comprehending the consequences these alternatives will have in the environment. (Gavetti & Levinthal, 2000)

In short, cognitive representations can be described as a lens through which managers view the environment and the actions available to them, and it is important to highlight that decision making is affected by the representations and not the real environments they are thought to reflect. Their most important feature pertaining to decision making is how the causal relationship between the environment and the company is understood, and this enables managers to assess what effects decisions will have on the environment and vice versa. (Nadkarni & Barr, 2008)

Figure 5 illustrates the real environment as a collection of elements, some of which are more significant than others, that hold relationships of varying strength. The environment is reflected in the cognitive representation that is a low resolution abstraction, and it does not picture the characteristics of the environment to full extent. This representation determines the meaning of events managers perceive in the environment and how they assess the outlook of actions they take.

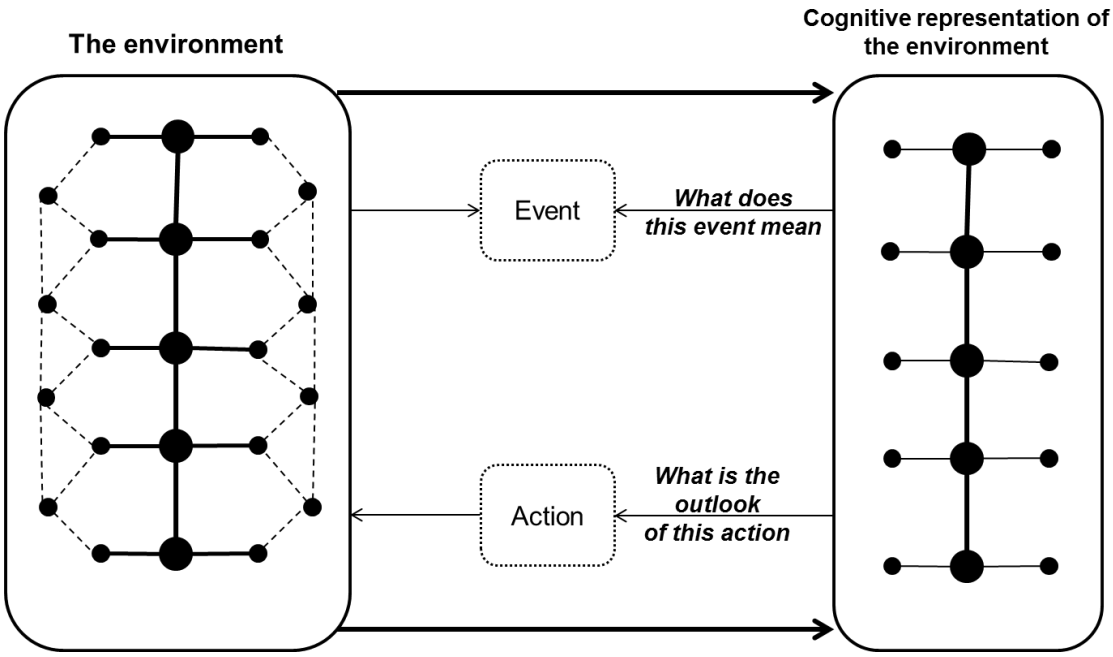

Figure 5 The environment and the cognitive representation

The representations that managers have of the environment enable them to make rough estimations of what they expect of future outcomes. This makes it possible for them to compare alternative courses of action on a rudimentary level and allows them to choose actions that have more favorable consequences. (Gavetti et al., 2012)

Although decision making is dependent on strategy frames, there are underlying psychological factors that complement strategy frames in describing how managers make up their mind and help draw a more comprehensive picture of how decisions are reached, and how managers find themselves in decision making situations. In a nutshell, the psychological factors lead decision makers to attend problems that demand an urgent solution, to search for solutions that resemble previous ones and to choose the first alternative that satisfies their needs instead of conducting exhaustive search (Gavetti et al., 2012).

The search for action alternatives does not happen out of curiosity or a desire for understanding but because of problems that grasp managers' attention and need to be solved. This is called *problemistic search* and it will continue until a solution to the problem is found. Typically, problems are recognized when the company fails to meet its performance goals or is expected to do so in the fore-

seeable future. The problem can be solved by an alternative course of action that is expected to meet the goals or by adjusting the goals themselves to make an alternative acceptable. (Cyert & March, 1963) Problemistic search is often an iterative process where solutions are refined or replaced with new alternatives until a satisfactory one is reached (Gavetti et al., 2012).

When deciding on a course of action, *satisficing* refers to the tendency to choose the first alternative that is expected to be satisfactory, instead of continuing the search until a definitive one is found. What is considered satisfactory is a subjective matter shaped by personal aspirations and the level of performance that individuals are accustomed to. (Gavetti et al., 2012) As described above, what managers expect the outcome of an alternative to be depends on the assessment they have reached based on their strategy frame.

Decision making is often marked by uncertainty when sufficient information for rational decisions is not available. Making far-reaching decisions in situations like this is generally found undesirable and avoided if possible. Such behavior is called *uncertainty avoidance*, as managers want to spare themselves from anticipating future outcomes and apply decision rules to provide a solution instead. Rule-based thinking makes use of standard procedures and experience over predictive abilities, which leads managers to search alternatives that are similar to those that have already been in use from known areas. Furthermore, this behavior tends to favor rule-based decisions that are quick to yield feedback. This happens because acquiring feedback gives the decision maker a sense of control, as it tells whether the decision is going to the right direction and adjustments can be made accordingly. (Gavetti et al., 2012)

These behavioral traits also suggest that managers are more inclined to engage in backward-looking than forward-looking scanning in the presence of uncertainty. Backward-looking scanning made use of managers' experience and prior knowledge in determining what to scan in the environment as opposed to forward-looking scanning that required judgement on what should be scanned given managers' understanding of the environment. If significant uncertainty is

present, it is reasonable to assume that managers' scanning decisions follow the same search rationale and are more likely to be governed by experience.

2.4 Managerial attention

The insight behind Mintzberg's (1978) view of strategy as "a pattern in a stream of decisions" is that intentions and plans manifest themselves in actions, and that companies' objectives and how they intend to reach them can be understood by looking at what they do. However, this raises a question of the events and mechanisms that actually lead companies to take actions. This question was partly addressed above, when managers were described to expend their efforts on problems that pose a threat of some kind in the foreseeable future and that force managers to do something in response to them. The events that lead to action, therefore, often have the quality of urgency, but this does not explain how managers come to discover such problems in the first place.

Ocasio (1997) asserts that what companies do depends on what managers pay attention to. He proposes a model called *the attention-based view of firm* that explains how managerial attention works in organizations and how it affects what actions are taken. The model operates on three levels: (1) an individual level, which explains the workings of attention in individual managers, (2) a social level, which describes how the everyday conduct of business and the situations managers find themselves in affect what managers pay attention to, and (3) an organizational level, which outlines the organizational factors that determine the nature of the situations managers will confront and in what context.

The first level, the individual level, is called *focus of attention*, where the concept of attention refers to the concentration of an individual's effort and mental faculties on a specific task. This concentration is a state of mind that focuses cognitive processing to a limited set of elements and ignores everything else with the sole purpose of completion of the task. Managers' attention can be directed to *issues* and *answers*, which Ocasio (1997, p. 194) defines as "the cultural and cognitive repertoire of schemas available to decision-makers to make

sense of (issues), and to respond to (answers) environmental stimuli". Issues, therefore, embody the meaning of environmental stimuli; they are the manner in which events are framed and understood as opportunities, problems or threats, for example. Similarly, answers represent the ideas of how certain actions work as a response to an issue. The issues and answers managers attend to ultimately determine what they do. (Ocasio, 1997)

The second level, the social level, is referred to as *situated attention* and it is grounded in the notion that situational characteristics affect the actions and thinking of individuals. Individuals' propensity to litter in a public place, for example, depends on the characteristics of their immediate surroundings, namely the degree of litter visible on the ground and whether they see other people litter or not. In an organizational setting, *procedural and communication channels* refer to the formal and informal activities, communications and interactions that managers confront inside their organization, examples of which are official meetings, reports and discussions. These activities determine what environmental stimuli reach managers and what issues and answers they have available for consideration. (Ocasio, 1997)

Let us imagine that, for example, a manager participates in a meeting with product development, where it is brought to his attention that a competitor has developed a new product, and the product development team expresses a concern of this event and outlines the probable consequences of the event on the company's business and presents ideas of what to do in response to it. Here, the characteristics of the situation, the manager's interactions with others in the meeting, direct his attention to specific issues and answers that then affect what he decides to do.

The third level, the organizational level, is called *structural distribution of attention* and consists of four organizational factors: (1) rules of the game, that are the principles that guide behavior and action and that establish a common ground of what is considered appropriate and legitimate inside the organization, (2) players, who are the individuals or groups of individuals that exert influence by regulating procedures, endorsing personal values and beliefs or promoting

issues, (3) structural positions, that refer to the specialized roles that individuals represent in the organization and that are reflected in their identity and interests, and (4) resources, that are the organizations assets and capabilities that allow it to perform its activities, and that are important to the legitimization of answers, since they define what the company is actually able to do. Together these four factors form a concept of *attention structures* and they govern managers' attention in an organization by defining the fundamental characteristics of the procedural and communication channels where managers operate. (Ocasio, 1997)

Practically speaking, players form the social interaction and influence the exchange of issues and answers in the procedural and communication channels through their skills and beliefs. The behavior of both managers and players are regulated by the rules of the game, and their roles and identities are shaped by their structural position, namely the organizational function they are placed in. Furthermore, rules and resources together define the legitimacy and importance of issues and answers. (Ocasio, 1997)

In the previous example of the meeting between a manager and product development, the fact that the meeting was arranged placed the manager into a situation where his attention was directed to certain issues and answers. If he hadn't attended the meeting, his attention would have been somewhere else instead of the issues presented there. This is an example of how routines and everyday arrangements govern managerial attention, and it is important to highlight that organizations have control over their procedures and activities and it follows to reason that they can modify where attention is directed to by modifying their procedures and activities. A company might consider, for example, that it holds periodic meetings where the specific topic of discussion is the actions of their competitors, thereby directing attention to issues of a certain kind on a regular basis. Furthermore, the company could invite other organizational functions and other managers to the same meeting, and effectively increase the amount of players at the table and broaden the range of issues and answers available to managers.

Examples of such modification of procedures and activities are provided by Joseph and Ocasio (2012), who showed how the creation of communication channels between business units and corporate headquarters improved the implementation of strategic plans and the adaptive capabilities at General Electric. Their study concluded that an organizational arrangement lacking in communication between business units and the headquarters leads, for example, the headquarters to enforce plans that would later create problems when implemented by the business units. The introduction of communication channels between the two organizational levels, however, resolved the situation by allowing business units to direct headquarters' attention, facilitating an exchange of perceptions of the environment between the two and leading to improved adaptive capabilities.

Other empirical examinations of the attention-based view of the firm include Bouquet and Birkinshaw (2008), who studied how subsidiaries can draw the attention of their corporate headquarters to attain positive attention in the form of support and recognition and who identified factors contributing to the degree of positive attention subsidiaries receive. For example, headquarters assess the weight and importance of subsidiaries, namely how attractive the markets where they operate are to the future performance of the corporation and the relative extent to which other subsidiaries depend on the subsidiary and the heavier the subsidiary the more attention it will garner. In addition, the appearance the subsidiaries elicit through the initiatives they create to develop their businesses, and the specific measures they take to establish credibility can elevate the subsidiary above others, pulling in attention in the process.

Furthermore, the geographic distance between headquarters and a subsidiary affects attention negatively, since managers generally have a weaker understanding of remote areas compared to those in their vicinity. Another impeding problem that subsidiaries can face is their underlying capabilities and their functionality in the corporation and the risk of being labeled less relevant by default. For example, R&D units are generally considered to carry an inherent weight heavier than that of sales. The practical implications for subsidiaries and their managers outlined by Bouquet and Birkinshaw are that they can foster a posi-

tion of strength through activities that make other subsidiaries dependent on their actions or through initiatives that enhance their appearance. (Bouquet & Birkinshaw, 2008)

It is noteworthy that Joseph and Ocasio (2012) highlight that important issues often emerge in the lower levels of an organization as opposed to the headquarters, and they herald middle managers as powerhouses of new initiatives. Their power is effectively unleashed only if there are procedural and communication channels where they can interact with senior management and affect management's attention. On a similar note, Mintzberg (1994, p. 113) emphasizes the role and contributions of employees outside of decision makers and how they can offer them "alternative conceptual interpretations of their world". An example of how the inability to change managerial thinking can affect businesses is provided by Tripsas and Gavetti (2000), who showed how managerial beliefs at Polaroid created rigidities that prevented the company from adapting itself to a changing environment.

There is a detail in the Tripsas and Gavetti (2000) study that is worthy of further attention. The study explains how there were managers who urged top management to revise their thinking in a clash that lasted for years. The case was not, therefore, that employees would have lacked the opportunities to challenge the beliefs of senior management; it was senior management's cognitive inertia – the tendency of existing beliefs to defy contradicting evidence and to endure – that rendered such interactions unfruitful from the lower-level managers' perspective. In this respect, it seems clear that the communications and sharing of perceptions that occurred between senior and middle management didn't amount to much at Polaroid.

Although Joseph and Ocasio (2012) did show that General Electric did benefit from communication and interaction channels and did improve its adaptive capabilities as a result, their findings mainly concern organizational structure and design and the notion that such channels are a prerequisite for middle and top management to share perceptions and to improve co-ordination. Furthermore, Vuori and Huy (2016) stress that the existence of channels in itself does not

guarantee that something useful will eventually happen; it is the quality of interaction that occurs between people in the channels that decides the outcome. The contribution of the Vuori and Huy and the Tripsas and Gavetti (2000) studies is that they examine the issues that complicate interaction between top and middle management and that they outline the effects that these issues have. While Tripsas and Gavetti focused on cognitive issues, Vuori and Huy focused on shared emotions.

Vuori and Huy (2016) sought to understand the relationship between top and middle management at Nokia corporation during the problematic times following Apple's introduction of the iPhone – a product that greatly disturbed the market for mobile phones. The practice of business at Nokia was such that top management's attention focused on the external environment and that middle management focused on internal matters and the implementation of plans under top management's direction. A phenomenon that followed this design and that was exacerbated by the increasing threat of the iPhone was the shared emotions in top and middle management.

Top management feared external factors, such as lagging behind competitors or disappointing investors in quarterly reports, while middle management feared internal factors, such as the negative reactions of top management and the threat of losing their jobs. These shared emotions in top and middle management produced behaviors that had detrimental effects on the interactions and communications between these two levels of management. The emphasis of the study was on product development and innovation, and top management would, for example, pressure middle managers in developing new products and solutions, and middle managers would knowingly announce unrealistic schedules or refrain from discussing issues. The prevailing emotional factors and their side effects were seen to contribute to the declining quality of Nokia products and to the company's ultimate withdrawal from the mobile phone market. (Vuori & Huy, 2016)

2.5 Formal intelligence teams in organizations

It is generally accepted that companies are bombarded with more information than they can handle, and most of the information that top managers receive comes from subordinates (Hammond, 1994). In some cases, companies deploy specialized units to conduct environmental scanning in an organized process of intelligence (Gilad, 1989). The professionals carrying out these activities are called intelligence practitioners (Jin & Ju, 2014). In the view of Lenz and Engledow (1986), the purpose of such a unit is to gather and interpret information from the external environment and to support decision making through their analyses. Stubbart (1982) points out that managers are easily consumed by short-run problems, and entertains the idea that a scanning unit would act as a counterbalance of sorts by drawing attention towards issues that could threaten the company in the future and help prepare against them.

Reflecting on Daft and Weick's (1984) four modes of interpretation, it is reasonable to think that companies engaging in the modes of conditioned viewing or discovery are more prone to have a dedicated unit carrying out scanning and analysis activities. Conditioned viewing was characterized by scanning through established procedures and producing routine reports and documentation. Discovering also engages in formal data collection but unlike conditioned viewing, the primary focus is not on routines that collect data concerning fixed topics, but rather on studying the environment and seeking answers to important questions. Lenz and Engledow (1986) found that the characteristics of companies' intelligence processes correspond to those of the discovery mode.

In contrast, the remaining two modes of interpretation do not collect formal data systematically. The mode of undirected viewing mainly utilized personal networks and informal data, and the enacting mode was concerned with taking actions that produce reactions in the environment, not with data collection per se. Both of them do collect data, but do not require a specialized unit for scanning activities.

The chief benefits of intelligence units are that they broaden scanning beyond what managers can do by themselves, and identify issues by interpreting what they see (Lenz & Engledow, 1986). Lenz and Engledow's study on ten large North-American corporations known for the prowess of their environmental scanning units suggests that interpretation of data is what made the units valuable to companies.

In a recent paper, Jin and Ju (2014) outline the general task structure of intelligence practitioners. Firstly, they gather data on specific matters commonly referred to as key intelligence topics or key intelligence questions (KIT/KIQ). Secondly, they are responsible for processing and structuring the data into a comprehensible form. Thirdly, they judge the data and try to predict issues and challenges, and then devise plans and solutions on what the company should do in response to them.

The study of Ghoshal and Westney (1991) provides the most detailed examination of the relationship between intelligence teams and management so far. The main problems they were able to identify between the co-operation of intelligence teams and management pertained to managerial culture and the perceived relevance of the teams' outputs to the organization. The issues concerning managerial culture were manifest in managers' reluctance to use analyses created by the teams. The managerial culture could, for example, downplay the importance of monitoring the competitive environment or display a style that relied more on managers' personal intuition than on a sharing of information.

Furthermore, Ghoshal and Westney (1991) found that the teams lacked credibility in the eyes of management, which made it difficult for the teams to produce intelligence that could be perceived as relevant. They identified two important factors underlying this phenomenon. Firstly, managers generally perceived the teams to lack in experience pertaining to their businesses and believed that the teams are not able to understand and interpret information. Secondly, a high rate of turnover in teams prevented managers from developing trusting relationships with individuals in the teams, which further exacerbated the situation. The lack of credibility was detrimental to the teams and led to an atmosphere where

the teams would rather refrain from interpreting information than risk being wrong.

According to Lenz and Engledow (1986), companies' scanning units can take three organizational roles. Units of the *public policy role* scan the general environment to detect emerging trends that would affect the company as a whole and bring them to the attention of managers. A unit of this kind does try to influence managers by raising awareness of broad trends and introducing new perspectives to their thinking. The *strategic planning integrated role* is connected with decision making through direct interaction in planning processes. Units of this role scan for strategic issues that have a recognized impact in the environment and introduce them periodically to managers. Furthermore, they are responsible for preparing an environmental forecast for the business as a whole. The *functioned-oriented role* is concerned with matters pertaining to a single organizational function within the company. It is activated by pressing issues, and typically seeks answers to well-specified problems.

Lenz and Engledow (1986) state that conforming to managements' planning processes does help intelligence units ensure the relevance of their outputs, but the teams then risk adopting a role where they simply apply standardized procedures and definitions to everything they do. Such a role, they argue, would be characterized by repetition and smother unconventional thinking about the environment that would be valuable if the teams wish to be effective in detecting changes.

Stubbart (1982) questions scanning units and argues that establishing such units is unlikely to pay off. He argues that such units can hardly produce anything genuinely useful to the company since the essence of environmental scanning is in interpretation, and in his view the persons best suited for the task are the managers, who are already well acquainted with their environments. Stubbart (1982, p. 144) explicitly states that such teams "do not have a system for defining, measuring, and interpreting a business unit's environment more accurately than the unit's own management can". Similar to the view of Daft and Weick (1984), his thinking frames interpretation as a process occurring solely amongst managers.

A great deal of recent literature on organized intelligence deals with techniques, such as applied mathematics (Welter, Mayer, & Quick, 2013), information systems (Jin & Ju, 2014) and scanning solutions for the Internet (Lau, Liao, Wong, & Chiu, 2012), and with methodology, such as task structures and objectives (Bartes, 2011; Calof & Wright, 2008). A different view point is presented by Cekuls (2015, p. 248), who conducted a survey in intelligence units in Latvian companies and found that more than half of the respondents reported problems that could be generally described as “communication gaps” and “inefficient levels of collaboration” and he suggests that these problems arise from differences in culture and values between the intelligence units and the rest of the organization.

In addition, Wright, Eid and Fleisher (2009) covered the attitudes of senior executives towards organized intelligence operations in UK retail banks through a survey questionnaire. They found that the self-reported sentiment of executives is supportive towards the intelligence operations in their companies. The study of Cekuls and the study of Wright et al. are, unfortunately, bounded by the limited expressive power of their survey responses and are unable to provide insight on how their conclusions play out in organizational reality.

2.6 Bridging intelligence with managerial cognition and attention

The perspectives of managerial cognition and attention described above make managers subject to considerable limitations. Due to bounded rationality, managers’ ability to model the environment in abstract, cognitive representations is incomplete. Managers cannot, therefore, predict the environment with certainty and can only make rough estimations of what they believe future outcomes to be. In addition, the concept of attention suggests that managers can only cover a limited range of issues in the environment over a certain period of time. Moreover, where managers’ attention is focused in the environment is greatly influ-

enced by the activities and communications they take part in and the intricate social workings of these situations.

In light of the considerations outlined above, utilizing an intelligence team does present itself as a compelling idea. As advocated by Lenz and Engledow (1986) and Ghoshal and Westney (1991), for example, an intelligence team could observe more in the environment than what managers could alone and then interpret what they see. An intelligence team could, therefore, (1) increase the attentional capacity that the organization directs towards the environment, (2) increase the amount of individuals trying to make sense of the environment and (3) broaden the repertoire of interpretations available for managements' consideration.

Figure 6 below illustrates how intelligence teams and management both scan the environment, the teams primarily in their formal scanning procedures and managers in their less formal, personal scanning activities. The teams' and management's attention is governed by the sphere of attention-mediating factors, namely the activities and communications they take part in, and these factors will determine what will grasp their attention either inside the organization or in the environment. Most importantly, the teams bring environmental data and interpretations to the attention of management in the activities and channels where they interact with each other. Both the teams and management are equipped with their own schemas that are responsible for interpreting the environment and management's schemas would also judge the relevance of the interpretations the teams present to them. Furthermore, schemas also govern scanning either through a backward-looking or a forward-looking scanning logic.

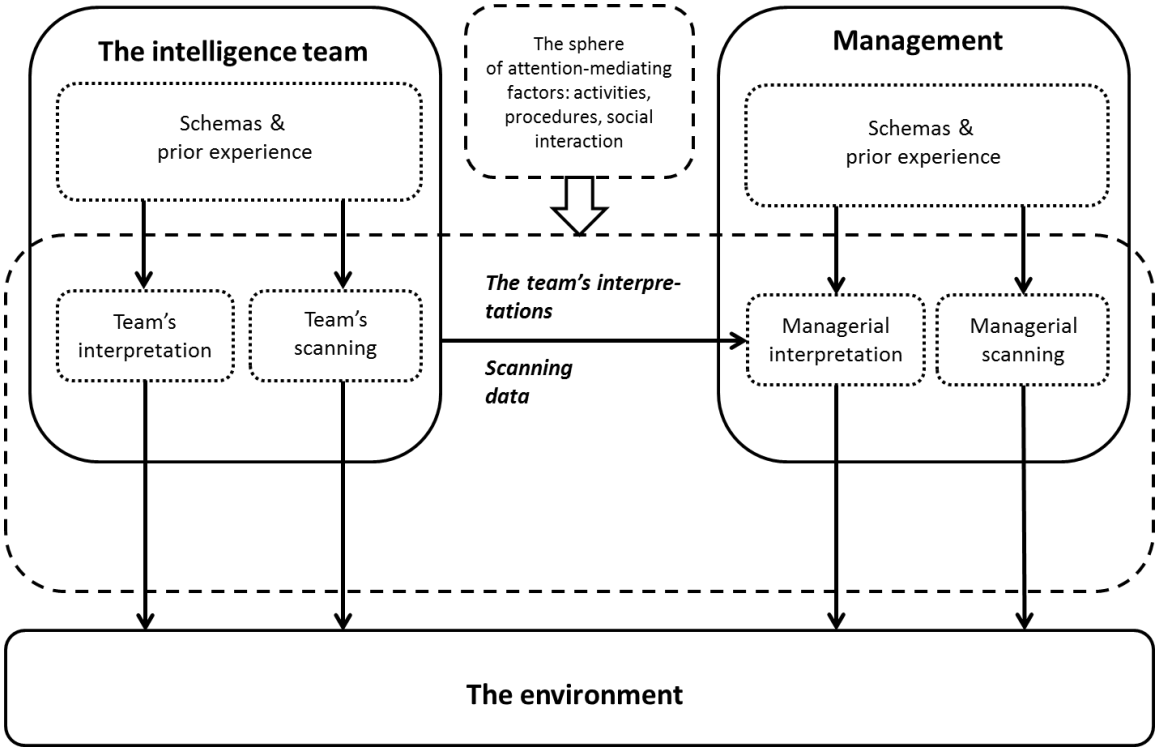

Figure 6 Management, the intelligence team and the attention-mediating factors

So far, managers have expressed a concern of intelligence teams lacking the business experience required to understand the environment (Ghoshal & Westney, 1991). In an extreme case of an intelligence team operating in disconnection of the rest of the business it would not have the underlying mental models necessary to interpret information specific to the business, and would simply resemble a data bank holding a collection of observations void of structure and meaning. In fact, there would seem to be very little reason against outsourcing such a unit. It is not a surprise that achieving shared conceptions between the teams and management appears crucial to managements' perception of the teams' usefulness. However, reaching favorable conditions for intelligence teams to operate and then capitalizing on it has proven a difficult task.

Generally speaking, previous literature suggests that managers want more interpretation and less data from intelligence teams. According to Ghoshal and Westney (1991, p. 22), for example, managers explain that "it [the intelligence team] has to answer real questions" and "I want to know what he [a competitor] is going to do to me tomorrow". Managers, however, can also find it difficult to specify what they actually need. In addition, managerial preconceptions and

attitudes can discourage the teams from interpreting the environment. (Ghoshal & Westney, 1991) The teams, therefore, can find themselves in a contradictory position where their goal is to provide interpretations but where they operate under conditions that do not support such behavior.

Having the teams conform to the needs laid out in explicit planning procedures is likely to help ensure some degree of relevance of the teams in the eyes of management. This can, however, be counterproductive and discourage the teams from original thinking and from expressing their ideas. The problem boils down to the degree of freedom these teams are granted; giving too much autonomy is perceived to risk the teams' relevance to the organization and management, while giving too little would compromise their ability to interpret the environment and to detect changes.

Beck and Plowman (2009) call for managers to recognize their limitations and to be mindful of the human tendency to overly simplify matters and to establish autocratic claims. They argue that no individual is always accurate in their interpretations and that the breadth of individual contexts that allows variety in interpretations is an asset. An organization can try to collectively ensure a meaningful interpretation if there is a forum for exchanging perceptions. Eisenhardt (1989) studied companies operating in rapidly changing environments and found that a malleable decision making style, where multiple possibilities are considered concurrently and where understanding is refined in a fluid manner by tapping the knowledge of others, will outperform an authoritative style, where managers work alone and commit to a single course of action although they are not able to confirm the viability of their choice in advance.

Thomas, Shankster and Mathieu (1994, p. 1278) write that interpretation "does not essentially involve modeling an objective reality, but it does entail identifying *whose* reality is going to be attended to [emphasis added]". What would the organizational arrangements and conditions be that allowed this *who* to be an intelligence team? How would their behavior play out in such cases and with what outcomes? So far, it has been argued that such behavior could be beneficial to

organizations, and even wanted by many managers, but the explicit question of how this would actually happen in organizations remains largely unaddressed.

3 Methods

3.1 Data collection

This thesis was conducted as a qualitative study, where twelve individuals from four companies were interviewed about the intelligence operations at their companies and how the output of those operations is put to use. Each company featured interviewees of two kinds: representatives of the intelligence teams, working in the capacity of either an analyst or a director of the team, and business managers that used the outcomes of that team's work in carrying out their own jobs. Interviewees from the intelligence teams represented such titles as "Analyst", "Senior Analyst" and "Director of Business Intelligence". The interviewees from management were responsible for a variety of organizational functions including product management, sales, business development and strategy, and they represented such titles as "Portfolio Director", "VP, Strategy & Development" and "SVP of Business Development". The purpose of interviewing people both from intelligence teams and from management was to gain viewpoints on how the co-operation between these two parties was arranged from both sides.

I received assistance from M-Brain Oy – the commissioner of the thesis and a company specialized in intelligence services and consulting. The company approached the intelligence teams at eight companies with a request of collaboration by giving interviews for the thesis. Four companies gave a positive response, and further interviews inside the companies were arranged through the assistance of the persons interviewed there first. In exchange for their efforts, everyone taking part in the interviews were granted a copy of the future thesis. All four companies were large, multinational enterprises with annual revenues of 1 to 5 billion Euros and with over 10 000 employees each.

The interviews were carried out over a three-month period during autumn 2015, and all interviews were recorded and transcribed with the exception of two instances: a follow-up call with one of the interviewees to ask questions regarding a specific occurrence that emerged in the original interview and one interview that was conducted solely via telephone, and both of these instances were

stored in written notes on paper. The interviews were conducted in Finnish and their length ranged from 30 to 90 minutes.

Specific interview questions were prepared in advance and the interviews followed a semi-structured manner where the questions established pre-determined topics that were then further defined with context-specific questions with the intention of encouraging the interviewees to elaborate their thinking as the interview progressed. The interviews revolved around three principal topics: (1) what environmental data is collected by the intelligence teams, (2) the manner in which this data is put to use in the organization and (3) how the collaboration between the teams and management is arranged and the nature of these collaborative actions.

Two sets of interview questions were used: one for the interviewees from the intelligence teams and one for those from business management. Both sets of questions dealt with similar topics but took the nature of the interviewees' position in the company into account in wording and the viewpoints that the questions took. Moreover, I transcribed and analyzed every interview to gain further ideas of what to pay attention to with the context-specific questions in later interviews.

The semi-structured conduct of the interviews served an underlying purpose of exploration. Although the interview questions did establish pre-determined topics of interest, they were meant to initiate discussion rather than to acquire explicit answers, and the goal of the context specific questions that emerged during the interviews was to spark the interviewees to speak freely. Also, interviewees were asked to provide concrete examples around the themes that were covered. For example, when asked how the environmental data collected by the intelligence teams was put to use, the interviewees were asked if they can recall any examples of situations where this has occurred and of how it happened. Generally speaking, my guiding principle when carrying out the interviews was that of disregarding presuppositions in favor of discovery.

3.2 Data analysis

Analyzing the interview data followed the methodology outlined by Gioia, Corley and Hamilton (2013). The underlying idea of their methodology is that the reality of organizations can be understood by investigating how people do things and how they experience what they do. It is one thing to know why things are done, but it is explaining how they are done – the process of making things happen – that is most revealing. Uncovering such human processes happens through qualitative interviews, and they aim to provide a system for inferring understanding from interview data and for reporting the conclusions in a revelatory yet rigorous manner. The central idea in reporting findings is to present conclusions and the underlying evidence of those conclusions, the interview excerpts that they are inferred from, in tandem.

The data analysis began with open coding, which is the process of examining phenomena and events described in the data and essentially answering the question “what do they represent” and labeling them accordingly (Strauss & Corbin, 1998). Examples of such coding were distinct instances in the interview data that were coded as “the team challenges others’ thinking” or “the organization is dismissive towards the team’s work”. According to the Gioia et al. (2013, p. 20) methodology, coding is followed (1) by grouping the codes based on some unifying characteristic, (2) by further abstraction of such groups of codes into conceptual themes that describe the phenomena manifested in these groups and (3) by the formulation of a “data structure”. This data structure outlines the chain of reasoning that produces higher-order meaning from the interview data.

Practically speaking, the data structure operates on three levels: first-order codes, second-order themes and aggregate dimensions. First-order codes present the underlying evidence in the data and are the referents of the second-order, conceptual themes in organizational reality. Aggregate dimensions, in turn, bridge second-order themes together into even broader concepts. (Gioia et al., 2013) Figure 7 below presents the data structure developed on the interview data in this thesis. As the analysis process went forward it was recognized that

the themes and aggregate dimensions were manifest in two of the four companies interviewed: company A, a business operating in the consumer products industry and company B, a business operating in the forest industry. Both companies featured two interviews, one from a representative from the intelligence team and one from management.

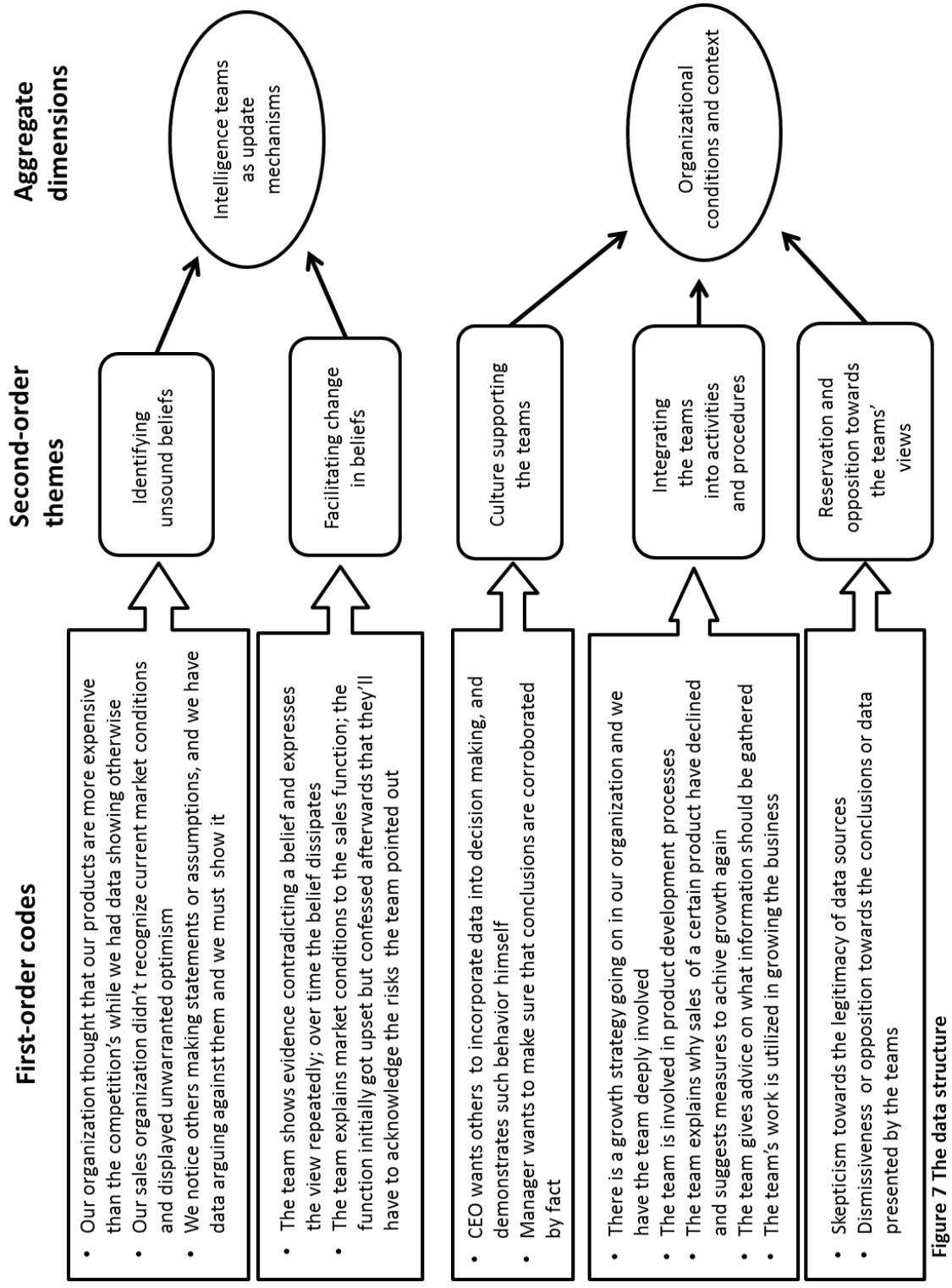

Figure 7 The data structure

4 Findings

4.1 Intelligence teams as update mechanisms

The interview data indicates that intelligence teams have the capacity to facilitate change in organizational beliefs in a process where they operate as an *update mechanism*. This operation is the joint effect of two smaller scale operations called *identifying unsound beliefs* and *facilitating change in beliefs*. Identifying unsound beliefs is the two-step process of (1) the teams' noticing of other organizational members' beliefs concerning the environment – statements or conditions they express to hold true – when the teams carry out their activities, co-operate with others and engage in discussions and of (2) the teams' subsequent recognition of an inconsistency between the beliefs they have observed and the understanding they have of the environment.

Facilitating change in beliefs, in turn, refers to the measures the teams take to argue against the unsound beliefs with the use of corroborating evidence. This evidence and the teams' argument together represent an alternative to the original, unsound belief, and the substitution of the original belief with the teams' alternative is regarded as the process of "updating". Since the teams are the organizational units that initiate this process they can be described as "update mechanisms". Table 1 summarizes the evidence of intelligence teams as update mechanisms and the following sections 4.1.1 and 4.1.2 examine this evidence in greater detail.

Table 1
Evidence of Intelligence Teams as Update Mechanisms

Second-order Theme	Company A	Company B
Identifying Unsound Beliefs	The team recognized that the company's sales organization believed their products to be more expensive than the competition's, a belief the team recognized as incorrect based on the data they had. In addition, the interviewee from the intelligence team commented that their team encounters "hearsay circulating through the corridors" and "fixated ways of thinking". She reported that "…occasionally you'll notice people making statements on something they have heard somewhere, and they'll say that's how things are, and then we have to make an effort and show data, for example, that actually says otherwise".	The team realized that their sales organization didn't fully appreciate current market conditions. Furthermore, the interviewee from the intelligence team raised concern of others restricting their breadth of view and becoming "blind" and said that in situations like that she "tries to awaken them" and "to illuminate how what they have at hand isn't necessarily the full truth".
Facilitating Change in Beliefs	The intelligence team argued against the sales organization's belief concerning their products' pricing level by showing concrete evidence. Initially, the sales organization's original belief endured, but the team repeated their view and reported that the belief dissipated over time and that subsequently the team had been requested to "monitor prices more carefully".	Having realized that the sales function didn't fully recognize current market conditions, the intelligence team explained their views with the use of data-driven analyses in a meeting with the sales function. Part of the sales function got really upset, and an athmosphere of disappointment followed, but the sales function later thanked the team and said they will have to recognize the risks the team had pointed out.

4.1.1 Identifying unsound beliefs

The representatives from the intelligence teams at companies A and B both demonstrated a sense of vigilance towards other organizational members' thinking, and most importantly, they evaluated the thinking they observed against their own understanding of the environment. The representative of the intelligence team at company A reported that, for example, their team encounters "hearsay circulating through the corridors" and "fixated ways of thinking". She elaborated the following on her thoughts:

"…occasionally you'll notice people making statements on something they have heard somewhere, and they'll say that's how things are, and then we have to make an effort and show data, for example, that actually says otherwise, and we have to rectify these kinds of assumptions."

Similarly, the representative of the intelligence team at company B brought up an issue of organizational members pigeonholing themselves to their own businesses, restricting their breadth of view and becoming "blind" and explained that often when outlooks are bad, people don't necessarily want to hear about them and face them in their organization. When asked what she can do in situations like this, she replied: "I try to awaken them, I try to illuminate how what they have at hand isn't necessarily the full truth". As described above, intelligence teams can operate as update mechanisms when the identification of unsound beliefs is followed by the teams facilitating change in beliefs. The following section shows two examples where the teams operated in this manner.

4.1.2 Facilitating change in beliefs

The interviews with the representatives of the intelligence teams revealed two instances where the teams had first identified an unsound belief and then continued to facilitate change in the belief. Table 1 outlines the main features of these occurrences. The team at company A had recognized that there was a misunderstanding concerning the pricing level of their products, and the team sought to change this belief. The team at company B, in turn, had observed that the company's sales organization didn't fully appreciate current market conditions and concluded that they have to bring the sales organization's conception of the market up to date. These situations were characterized by the teams' determination to explain their view and to show how they thought the organizations' understanding was insufficient or incorrect. In both cases, the organizational members that were subject to the teams' undertaking were initially quite determined to stand behind their original beliefs, and change in the beliefs was not immediate.

At company A, the intelligence team had realized that the organization, and the sales function in particular, had expressed the belief that “we are expensive” and the organization had initiated discussions of lowering prices. However, the intelligence team recognized that things were not how the rest of the organization believed them to be – they had price data showing that they were not more expensive than the competition. Here, we can see how the team noticed an organizational belief and then recognized that actual environmental data does not support the claim it makes. The representative from the intelligence team explained the events:

“…there’s an idea, for example, of the general price level of our product range compared to our competitors. We have actual price data collected on this matter, and despite us having shown this data and having said that things are not how they think they are – they are saying our competitors’ products are less expensive than ours and think that’s why they sell more – and we present data showing that this isn’t actually true. I felt that later on they’d forgotten about the fact and returned to the old thinking…“

A brief follow-up call with the interviewee illuminated the ultimate resolution of the occurrence. As was mentioned, the team observed that initially the original belief did endure, but the follow-up call revealed that the team had been repeating their view and that the belief had dissipated over time. Furthermore, the interviewee told that the team had been requested to “monitor prices more carefully” in the future. In addition, the interviewee mentioned that there had been issues related to certain individuals inhibiting the team’s progress, and that the team winning credibility over them was important to their achievement.

It is possible to think that the belief concerning the products’ pricing level manifested itself in the interpretation of “we are expensive”, which was reflected in the discussions of lowering prices. Hence, by arguing against the belief of the company’s pricing level, the team simultaneously questioned the interpretation and the action plans associated with it. Furthermore, this example shows how the team was able to strengthen itself. After facilitating change in the belief they

were asked to “monitor prices more carefully”, and the team’s success had, therefore, tilted organizational conditions to their favor.

The representative of the intelligence team at company B described a case where the team argued against the conception that the company’s sales organization had of the market. In this case, the unsound belief refers to the sales organization’s thinking and behavior that, in the intelligence team’s opinion, didn’t fully appreciate current market conditions. The team was invited to a meeting to review market outlooks, and the team then explained their views to the sales organization. She recalled her thoughts on this occurrence:

”One example of what has happened is that sales figures at a certain business area have declined and the prospects are weak, but the sales department believes in what they’re doing and arranges sales meetings, and they’ll ask us to present where the markets are, what competitors are doing, and what are the outlooks, and they are probably anticipating something empowering and positive. But in reality when we’ve attended these meetings, what we’ve had to say has been much more neutral and even emphasizing the risks and threats.”

In this example, we can see how the intelligence team judged that the sales organization had not fully accepted weakening prospects and was in a state that could be described as unwarranted optimism. Her testimonies indicate that the intelligence team wanted to draw the attention of the sales organization to the data that the team considered to describe the market and to their view that these figures should be acknowledged and addressed. As in the case of company A, the organizational members who were subject to the team’s efforts didn’t display immediate acceptance of the team’s views. The interviewee from company B explained her thoughts on the events that followed:

“Once part of the group got really upset, because they weren’t prepared to hear something like that, it’s possible some of them subconsciously realized that their products haven’t been selling and that there are challenges, and some of them were well aware of this, but I think the fact that someone external, we were an external party in respect to them, explains the situation and shows figures, it

can appear blunt, but we've managed these situations through discussions and we've heard a thanks afterwards, but we didn't hear it when we brought the issues up… …There was an atmosphere of anger for some time afterwards and I felt we were left a bit outside for a while, it was something like a month or a month and a half later when we heard a thank you, they said thank you for bringing these things up and that they'll have to acknowledge the risks in the future."

Altogether, both intelligence teams facilitated change in beliefs by explaining their views with the use of environmental data. The team at company A successfully argued the organization's belief of their products' pricing level to be unjustified. At company B, the team directed the sales organization's attention to their views and helped the organization come to terms with current market conditions, essentially facilitating change in the organization's conception of the market. It is also important how the teams were involved in activities and discussions in their organizations: the team at company B was invited to a meeting, which gave the team the opportunity to express their thinking, and the team at company A took part in discussions and kept repeating their view. It is clear that engagement and interaction with others was crucial to the teams in these cases. The following section dives further into these organizational aspects.

4.2 Organizational conditions and context

Organizational conditions and context refer to the culture and arrangements that influence the teams' actions inside the organization. The interview data suggests that these factors can be broken down to three subcomponents. Two of these subcomponents are considered to support the teams' actions while the third hinders them. Table 2 provides an overview of the three subcomponents and of the underlying evidence in the interview data.

First of the supporting factors is called *culture supporting the teams* and it describes the atmosphere that manifests itself in the behavior of other organizational members and in how they judge the intelligence teams. A supporting cul-

ture is one that incorporates reasoning justified by environmental data in decision making and that values the teams' cause in general, and the influence of the CEO can be particularly important in establishing such a culture.

Table 2

Evidence of Organizational Conditions & Context

Second-order Theme	Company A	Company B
Culture Supporting the Teams	There is a culture of incorporating environmental data into decision making. The interviewee from the intelligence team commented on the strong presence of the company's CEO: "Our CEO strongly supports the idea that we must have a team that produces information, and he's a person that wants decisions backed up with information... ...he insists others to ground their decisions in facts". The interviewee from management commented that the team's work is utilized because "we want to make sure that the conclusions we make are supported by facts".	No evidence of concrete behavior of other organizational members was present in the interview data. However, the interviewee from the intelligence team commented that the team promotes a culture where "information is incorporated into decision making" and that "everyone would ask themselves what information they need and what our company needs in order to compete".
Integrating the Teams into Activities and Procedures	The team is involved in strategic projects and in analyzing consumers and competitors. The team provides interpretations of the market and advises managers in the search for relevant information. Furthermore, the team makes suggestions for future actions in product development: "the team goes through numerous information sources, and then they come to us and tell us that, for instance, consumption in one of our product areas has decreased and they explain the reasons why that has happened and tell us if we want to achieve growth there again, this is what we should do, based on certain facts of the market".	The team's efforts play a part in "finding growth" for the company and they are responsible for identifying prospective new customers and assessing markets. The team's outputs assist in making sense of the environment.
Reservation and Opposition Towards the Teams' Views	The attitude towards the information provided by the team can be dismissive. Someone from "higher up in the organization" displays opposition towards the view of a declining market, despite having seen data that corroborates the view.	The interviewee from management is cautious about data provided by external sources and delivered by the team. The legitimacy of the team's views is questioned, and they compete with other internal information sources for management's attention.

The second supporting factor is called *integrating the teams into activities and procedures* and it refers to the concrete activities that provide the teams the opportunities to interact and exert influence and that demonstrate the manner in which their work is put to use. The teams can, for example, provide input to projects and take part in meetings and discussions where they have the chance to express their views.

The third, inhibiting subcomponent is referred to as *reservation and opposition towards the teams' views* and it outlines factors that can complicate the teams' work and inhibit their progress. This subcomponent manifests itself in the behavior of other organizational members that works against the teams and their goals. Most importantly, this behavior shows in organizational members' skepticism towards the data sources the teams utilize and in the reluctance to consider the teams' views and the evidence that contradicts their beliefs. These factors are most notably present in the opposition the teams face when they facilitate change in organizational beliefs.

4.2.1 Culture supporting the teams

Evidence of a supporting organizational culture was mainly present in the interviews at company A. Both the interviewee from the intelligence team and from management described behaviors and attitudes that supported the team's actions and goals. Most importantly, the actions of the company's CEO and their influence on the intelligence team's operations were brought up several times in the interview with the representative of the team. Firstly, the interviewee from the team stated that their CEO "strongly supports the idea that we must have a team that produces information" and she described him as a person who "wants decisions backed up with information" and who "insists others to ground their decisions in facts". Secondly, the interviewee explained how the CEO's influence showed in "the fact that our team is arranged like this in the first place" and how he wants that "everything the company does is to fulfill consumer needs".

The decision making culture endorsed by the CEO resonated in a remark made by the interviewee from management. The manager's remark demonstrates how the organizational culture has the team's purpose embedded in the company's values and how the team's outputs are appreciated:

"…the bigger the projects, the more we deploy them [the team]. Our growth strategy, for example, that's going on right now, the team is deeply involved because we want to make sure that the conclusions we make are supported by facts."

The interview with the representative of the intelligence team highlights the role the CEO at company A has had in establishing the team, in implanting a culture where decisions are grounded in facts and where there is a focus of "fulfilling customer needs". These findings indicate that the CEO has simultaneously initiated a culture where decisions are justified by fact, and established a team with the objective of serving this principle by scanning the market and collecting data. In addition, the interviewee from the intelligence team made an observation suggesting that behaviors in the organization had changed into the team's favor:

"We've been handling so much information now and you notice that reactions are not that 'oh this is so new and frightening and strange', and that people are not that baffled at all now that we've established a practice where information is utilized. It's now considered continuously, and it's been really important that when management makes decisions they must have reasons that are supported by fact."

The CEO's importance as an organizational player in company A highlights the role that senior management has in supporting intelligence teams. Effectively, the CEO at company A was a player who changed attention structures – the inception of the team and the promotion of a certain culture in decision making – in such a way that worked to the intelligence team's advantage. It is also noteworthy how the interviewee from the intelligence team had observed a

change in behavior in the organization and described how others were no longer “baffled” about having information incorporated in their activities.

The examples above highlight the role a CEO can have, but the interviews with the intelligence teams at both companies suggest that the teams also take measures in endorsing a culture that utilizes information in decision making. Specifically, the interviewee from the intelligence team at company B spoke of a culture of “leading with information” several times. She explained that one of the team’s objectives was to promote a culture where “information is incorporated into decision making” and that “everyone would ask themselves what information they need and what our company needs in order to compete”. However, the interviews at company B didn’t reveal any direct evidence of a supportive culture similar to that observed at company A.

4.2.2 Integrating the teams into activities and procedures

The intelligence teams at company A and B were engaged in two kinds of tasks. The teams would conduct regular analyses where they would, for example, make standardized “measurements” concerning market shares or macroeconomic indicators, and these tasks were carried out in periodic routines. However, the teams’ roles in organizational activities were most prominent in the second kind of tasks where they assisted other organizational members through specialized inquiries. The team at company A had a specific importance in providing “insights” for the company’s product development process and the team at company B would assist in “finding growth” by identifying prospective new customers and by helping managers to make sense of markets.

The interviewee from the intelligence team at company A stated that the purpose of the team was to be “the voice of the consumer”. Much of the team’s efforts were directed to understanding their customers and to monitoring their competitors’ moves. The interviewee elaborated on this matter: “we are the team that tells our company what consumers want, but another important task is to monitor the market and how our main competitor is doing”. Furthermore, the team had a special emphasis in helping the development of new products that

would compete better in the market. The interviewee from the intelligence team explained this idea:

”Our management wants that products introduced to the market are backed by a consumer need, and we’re the ones producing that knowledge, which is then used as a basis in product development by our product management.”

The interviewee from management from company A represented product management and explained his view on how the team would be utilized in the product development process. The team would analyze markets and consumers for their product development needs:

“It’s really project-specific, some projects, where we introduce new products, for example, it can be that we have the idea that we could introduce a new product in a certain product category. Then I ask them [the team] what information they have about this category, what are the trends there, and then I apply what they are able to provide me in my own thinking.”

The same manager at company A did, however, mention how he can lack the “time and ability” to conduct “comprehensive research and analysis” and further commented on the influence of the team’s work and on the value of the conclusions the team makes. The manager was asked how he reacts if the team has some kind of idea to offer him, and in his reply we can see how the team can go so far as to interpret the environment and suggest actions accordingly:

“I think it’s great how the team goes through numerous information sources, and then they come to us and tell us that, for instance, consumption in one of our product areas has decreased and they explain the reasons why that has happened and tell us if we want to achieve growth there again, this is what we should do, based on certain facts of the market. And then I think, well, that’s what we will do, because I know the ideas will go forward in our organization and no one will question them since they are based on actual knowledge.”

These findings suggest that the activities and procedures that intelligence teams take part in allow the teams to promote issues and answers and to draw other organizational members' attention to them. Furthermore, participation in these activities enables the teams to demonstrate their capabilities and to solidify themselves as legitimate organizational players. This is evident in the example above, where the manager judged that the idea presented by the team would "go forward in our organization" because it was "based on actual knowledge". The same manager also described how the explanations the team found for the declining consumption of their products provided "something to lean on" in future product development and how they were "on to something good, because them team's analysis shows there's a large amount of consumers behind this trend".

These findings also highlight how the intelligence team was considered a credible source of advice and judgement. Furthermore, the team at company A displayed initiative in this respect. The interviewee from the intelligence team explained how managers would make requests for "ad hoc" analyses and how the team would assist managers in the search for information:

"Sometimes what happens is that they ask, for example, how our sales have developed in a certain area, and then what I ask in return is what do you need this for, because often I realize that given the situation it would be better to look at a broader perspective or from a different point of view for them to get the information they actually wanted."

One of the main concerns of the intelligence team at company B was to assess market outlooks and the competitive landscape in periodic reports disseminated through an information management system. The interviewee described the discussions they have with managers in determining the content of these reports and how they would carry out such discussions on a regular basis. Here, we can see how the team at company B displays initiative similar to that at company A in assisting managers with their information needs:

”We always have a round of meetings with the representatives of business areas every autumn, and based on that round we form a service description. From their point of view, it’s kind of a shopping list, so to speak, where we describe the reports we’ll be making and when they will be issued, and what internal and external information sources we use... ...quite often I’ll have preliminary suggestions that will get us forward, and typically we will be going through them and after discussing for a while, they’ll start bringing in their own comments and viewpoints; ‘oh yes, I’ll be needing this and that at that point of time’.”

However, the interview data suggests that the role of the team at company B was best demonstrated in tasks where they would help the company make sense of the environment and grow the business. The interviewee representing management at company B specified how they make use of three information sources: the reports and other work produced by the intelligence team, their sales organization’s personal reports and the company’s bookkeeping data. These information sources were utilized in developing the business and in “finding growth" through various growth projects and here the three sources were combined to “develop something sensible”. The intelligence team conducted specific inquiries where they would, for example, provide market data, report on competitors or compile lists of prospective new customers. When asked how the organization makes use of their work and how that shows from their point of view, the interviewee from the intelligence team replied:

“The best examples are where we have done analysis on our customers or identified potential new customers and then we hear that our sales organization has been in contact with them and the backup material we’ve provided has been useful, that’s the best feedback there is; we’ve supported sales in acquiring new customers. Or if we have made a certain assessment of the growth of a certain market and then we have our business’s strategy or certain operative measures based on that assessment.”

4.2.3 Reservation and opposition towards the teams' views

The interviews at both companies revealed that the sentiment towards the data and conclusions provided by the intelligence teams can be dismissive or even negative and that an immediate acceptance of information as fact cannot be expected. These considerations indicate clashes between the intelligence teams and individuals who override the teams' views. Other organizational members can, for example, question the reliability of the data that the teams provide or dispute the meaning of it. The representative from the intelligence team at company A commented on the objections they face from time to time:

"It's possible that some things are questioned, for example, is our sample of a survey sufficient and can we trust it, we have these kind of discussions sometimes. We do have an information source of our consumer market, and it's a big one, a consumer poll, but occasionally people question it and say something along the lines 'that's just that information again', sometimes people react that way…"

Similarly, the interview with the manager at company B revealed a reservation towards the legitimacy of the intelligence team's data sources. The interviewee exhibited a sense of caution towards the figures provided by external data sources and delivered by the team. The manager raised concern about the credibility and reliability of the data:

"... it's about the extent to which we can rely on a figure extracted from a data source for example, there's someone who has compiled and added up all that data, and it's possible there can be mistakes, and we'll have to think is it really the case what it says. So, for example, if it's said that deliveries of a certain kind of product to a certain area have increased by five percent over the past six months, we'll then think is that really the case, or have they made a miscalculation… …they are complicated to measure and it's possible there's mistakes, it's unavoidable, the research center that does them has to make estimations and of course there can be mistakes."

While the examples above mainly deal with other organizational members questioning the credibility of the teams' data, the interviewee from management at company A brought up an incidence where an organizational member displayed adamant opposition towards the meaning of information that, in the interviewee's view, should be considered as a certain fact. In this case, the opposition was not about disputing the reliability of data, but about overriding the meaning of it.

"You also have cases where someone higher up in the organization comes and smashes his fist to the table and says 'this is how it is', and then you can forget about informed decisions based on facts, it's useless at that point, because someone just comes and says how things are… …it has been, for instance, that it's been shown that a market is declining, it's been confirmed that it does. Then someone steps in and says 'it's not declining' [the person would argue]. Well, as a matter of fact, it is declining, just look at this and this! 'It's not declining, people are consuming here and there' [the person would continue]. What's that based on then?"

The incidence above where a person from "higher up in the organization" displayed denial of a declining market was an extreme example of the opposition that intelligence teams can face in organizations. It appeared to be difficult for the interviewee to understand the person's behavior, but it might be reasonable to suspect that the person refuted the news of a declining market while not yet knowing how to deal with the fact and decided to give an appearance of self-confidence in an attempt to keep spirits up in front of depressing outlooks. It is, therefore, conceivable that the person's behavior was explained by an unwillingness to accept the fact publicly.

One should acknowledge, however, that it is not necessarily straightforward to explicate the meaning of new information and to determine how that information will affect the future plans of the organization. Regardless, it is difficult to see how contradicting commonly shared data with a counterargument of virtually no substance would do anything else than result in a sense of confusion and discourage other organizational members from paying further attention to the data.

This example highlights how the values and behavior of individual players can act against intelligence teams' goals.

The interview data indicates that intelligence teams' might have to compete for management's attention with other sources of judgement in the organization. The interview with the representative from management at company B suggests that he faced a challenge of balancing between two contrasting information sources: the sales organization's own accounts of conducting their business, and the data and viewpoints delivered by the intelligence team. The interviewee explained that his main objective from a managerial point of view was to understand markets and customers and to identify areas of growth opportunities. He emphasized the sales function's conception of their customers and "the tacit knowledge you can't quantify in any way" and how these aspects contributed to the effort. He touched these issues in the following remarks:

"Generally the sales people who work in the business have the best grip of it, it's based in their experience, some of them have been in the business and the market for 25 years, that's one way to approach it, and then another one is to challenge it through market data, and we try to fit these two together to figure out what's true… …but someone who's been in the business for twenty years, somehow just knows when things are not going right, we take it seriously and then we try to assess whether it's resistance to change or if it's something justified."

When asked what happens if the two – the view of the sales organization and the market data – are in disagreement, he commented that when confronted with negative news, the probable reaction in the sales organization is refusal and disbelief. However, the interviewee reported that in such instances they would make their way forward by going through the issues together and that over time a "sensible approach in everyone" would likely be reached. The interviewee commented on this matter:

"Of course there's a phenomenon where salesmen tend to be conservative, and believe in the business they're in. When they're told that what they've been do-

ing is slowly dying away and we've got this other thing coming up instead, they'll probably say 'that's not true'. It's an emotional reaction. And there's no standard formula, we specifically look into every situation and think what to do about it, there's not that many of us here and we know each other well. But what I want to say is that, these intelligence figures, we can be slightly cautious about them, we are well aware there can be mistakes in them."

In the two testimonies above, we can see that there was a question of what is more meaningful from a managerial point of view at company B, the data generated by the sales organization and manifested in reports of personal accounts, or the views of the intelligence team and market data, and which of the two makes a more convincing argument. These findings also indicate that a factor inhibiting the teams' progress can be a sense of caution towards the teams and their data sources embedded in management's thinking. Part of the teams' challenge, therefore, can be to overcome such presuppositions and convince managers that the views they present are valuable and to consolidate their views as a legitimate proxy of reality.

5 Discussion

Daft and Weick's (1984) model of organizations as interpretation systems proposes a three-stage process where organizations (1) carry out scanning to gather data from the external environment, (2) let managers interpret the data to determine the implications of the environment for organizational action and (3) follow these implications in actions and then learn from the outcomes. Two important properties of this process are that, firstly, interpretation and action are preceded by scanning and that the results of scanning are incorporated in the interpretation process, and secondly, that the learning that occurs after organizational action can justify a revision of interpretation if outcomes are observed to be different to expectations.

One can, however, question the extent to which current interpretations and actions are a consequence of actual data collection from the environment. The discovery of an urgent problem, for example, might drive a manager to take immediate actions based on existing beliefs rather than to commence scanning. Moreover, Ocasio's (1997) views suggest that managers might not conduct scanning unless there is something that directs their attention to it, such as a specific procedure or the influence of an organizational player. Furthermore, the scanning that companies do engage in cannot possibly cover all relevant aspects of the environment and managers are not able to fully consider all available data in their interpretation processes. Hence, the connection between scanning and interpretation can be of dubious quality and it is possible that the temporal sequence of scanning preceding interpretation and action does not occur at all.

The findings of this thesis improve our understanding of the relationship between scanning and interpretation and describe how intelligence teams operate at the interface of the two. Managers might not see any reason to doubt the validity of their own thinking but an intelligence team operating as an update mechanism can (1) discern faulty interpretation, (2) pinpoint managers' misunderstandings and (3) propose an alternative assessment to them and induce change in beliefs. Utilizing an intelligence team can, therefore, help ensure that interpretation is supported by environmental data and that misconceptions are

recognized and interpretations revised *before* action is taken rather than after. This does, however, call for managers to allow others to scrutinize their thinking and to incline towards adopting alternative conceptualizations of the environment. Moreover, previous literature has described how distinct events in the environment grasp management's attention and how management then collaborates to interpret those events (Beck & Plowman, 2009). This thesis, in turn, shows how intelligence teams can operate in the background of management and can engage in an uninterrupted survey of management's thinking that alarms management whenever misinterpretation does surface.

The procedures and activities the teams take part in are crucial to this undertaking. The teams cannot grasp others' thinking unless they engage in discussions with them and cannot exert influence without the proper opportunities to do so. Furthermore, a decision making culture that incorporates environmental data in decision making encourages the teams and helps establish them as legitimate players. The teams' main resources are their reasoning powers and the concrete data that they apply in justifying their views. However, organizational members can be dismissive towards the teams' work, exhibit reluctance to consider the teams' views and the corroborating evidence supporting them, and it can take time before managers concede that the teams' views are worthy of consideration. As Ford and Baucus (1987, p. 370) put it: "the power to define reality is not willingly surrendered".

Altogether, the second-order themes and aggregate dimensions outlined above together form a framework around the teams' behavior in organizations. Firstly, the organizational conditions and context lay the ground for them to operate in. Integrating the teams into activities and procedures and a culture supporting them are conducive to their actions in identifying unsound beliefs and in facilitating change in beliefs. The reservation and opposition towards the teams' views does the opposite and is the primary source of resistance to the teams' efforts in facilitating change in beliefs. Figure 8 below illustrates these relationships.

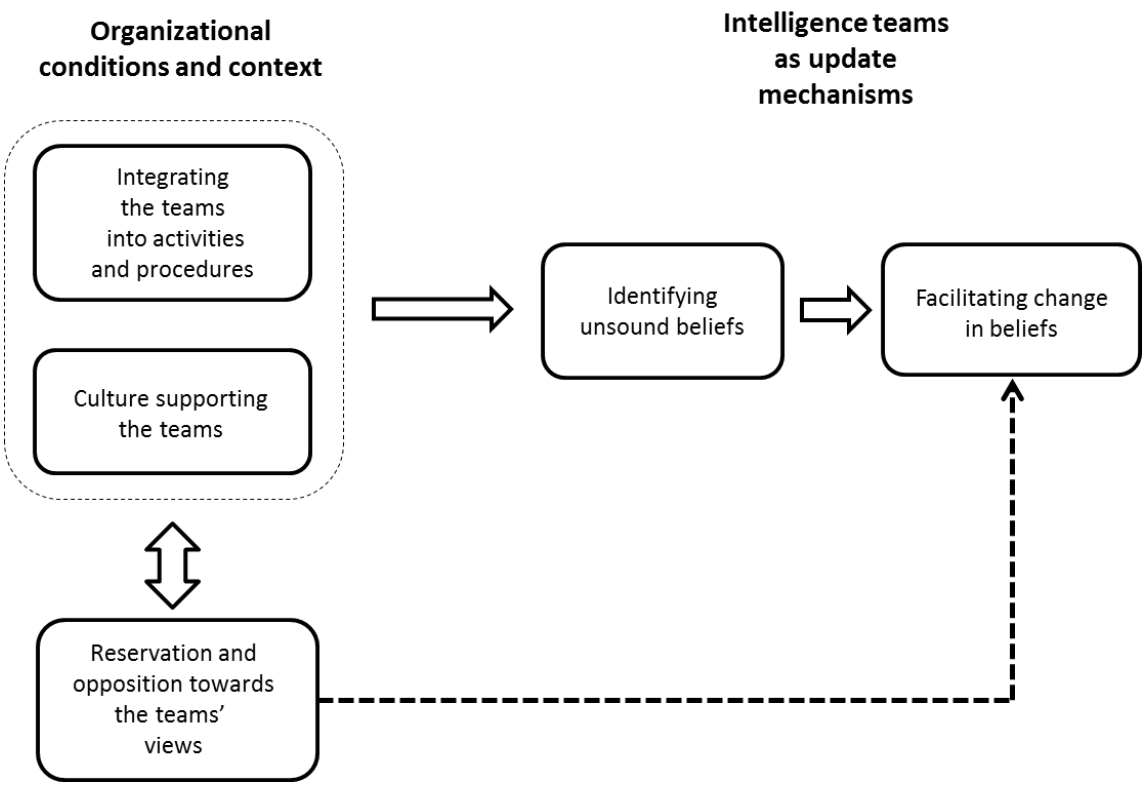

Figure 8 Intelligence teams in facilitating change in organizational beliefs

In certain respects, the teams' behavior bears resemblance to that described by Bouquet and Birkinshaw (2008, p. 582), who argue that a subsidiary produces a distinct "voice". In their view, a subsidiary can attract positive attention from a corporate headquarters through "initiative taking", assertive, change-oriented behavior and "profile building", the commitment it displays towards organizational goals and values and the track record of accomplishments. The teams' efforts in facilitating change in beliefs can be thought as a form of "initiative taking", which then contributes to "profile building" once their efforts are recognized. Although the concepts of initiative taking and profile building were initially used in a different organizational context, it is useful to apply them here to describe how intelligence teams are able to improve their position in organizations.

The practical implications of this thesis are twofold. Firstly, it is important for managers to recognize that intelligence teams can facilitate change in organizational beliefs. An organization looking to ensure an accurate perception of the external environment can find a solution from an intelligence team, while remembering to properly integrate the team into their activities and communications. It is equally important for managers to pay attention to the culture sur-

rounding decision making, and a culture where environmental data is appreciated and where managers are open to alternative considerations of the environment is likely to encourage the teams in this behavior. Secondly, intelligence teams willing to strengthen themselves inside the organization can, in turn, try to influence senior management and especially the CEO to endorse a culture or procedures that are in favor of them. Furthermore, it can be worthwhile for the teams to manage the "voice" they emit and the image they project of themselves inside the organization in order to attract positive attention from management.

This thesis also provides an answer to previous literature, including Stubbart (1982), who would have wanted to see environmental scanning units function as a counterbalance for managers, who are often consumed in short-run operational problems, by bringing threats to their attention that would otherwise go unnoticed. Referring to a lack of understanding of their businesses and of true insight into what is relevant in the external environment, he deemed scanning units incapable of reaching this ideal. This is, however, what we can observe intelligence teams do now – they are effectively raising important considerations to the attention of other organizational members. It is reasonable to think that these teams today have better resources and are much more powerful players than the scanning units of the early 1980's, thus weighing more in attention structures than during the time when Stubbart reached his conclusion.

Furthermore, Ghoshal and Westney (1991, p. 24) investigated the manner in which organizations benefit from competitive intelligence units and described an operation called "sensitization", where the units would "'shake up the troops' through presentations that combined data, interpretations, and conjectures". Ghoshal and Westney (1991, p. 24) provide two examples of how the teams operated in this manner:

"Through a powerful series of presentations the CA [competitive analysis] unit of the company showed the remarkable progress the competitor had made in its product and process technologies, the gradual and carefully planned expansion of its share in many key markets, and hence the reality and urgency of the

threat it posed to the company's long-term future. Another example from one of the other companies was a competitor analysis presentation that addressed the perception that a particular competitor was in an extremely vulnerable financial position and therefore not a significant competitor, and demonstrated how in fact it continued to be a serious threat both in the home market and abroad."

Their description of the events does show that the intelligence units recognized shortcomings in their organizations' perceptions of their competitors and that the units challenged them. However, their analysis of the situations falls short of the ultimate impact that these "presentations" had and it is left unclear whether these efforts resulted in any concrete change in beliefs or not. The descriptions above merely imply that there was a recognized opportunity for the units to influence beliefs, but it is not shown that the opportunity was effectively capitalized. While this thesis discovered similar behavior in intelligence teams, it goes further in demonstrating the actual power of this behavior, examines in greater detail how the teams are able to induce change in beliefs and builds a conceptual framework around the phenomenon.

A significant limitation of this thesis is the small number of interviews that cover the cases where the intelligence teams are perceived to operate as update mechanisms. Both cases featured only two interviews and the specific occurrences where the intelligence teams directed attention and facilitated change in the organization were covered only by one representative from each of the teams, which raises concern of a lack of depth into the events that took place. Moreover, a direct managerial point of view to these two occurrences is lacking altogether. The views of the parties whose beliefs the teams sought to change could have complemented and further validated the findings and especially, illuminated the way they experienced their beliefs being challenged and the change process that followed.

6 Conclusion

This thesis explored the role of modern intelligence teams in large, multinational corporations and shows evidence that such teams can play a role in dismantling outdated organizational beliefs and in rebuilding them on fresh environmental data. The significance of this capacity is that it helps the organization maintain an accurate perception of the environment and that it contributes to the accuracy of organizational interpretation as well. While findings in previous literature by Ghoshal and Westney (1991) have suggested that the teams can challenge existing beliefs, this thesis demonstrates how they continue to facilitate actual change in beliefs.

The propositions of Daft and Weick (1984) suggest that organizations function as interpretation systems through a three-stage process of scanning, interpretation and learning. The reality of organizations is that complete adherence to this sequence can be too high a demand. Managers can, for example, be tempted to act swiftly on existing beliefs, effectively disregarding scanning from the equation. It would be impossible to scan everything, but an intelligence team can, however, make sure that scanning is incorporated when it is needed the most: when managers display a misunderstanding of the current nature of the environment. The action of the teams is analogous to that of a passenger in a car who realizes that the driver has not noticed an approaching vehicle and who alarms the driver of imminent collision. As in the case of the driver, it can occur that other organizational members must take action to re-orient managers' attention before it is too late.

Further examination of modern intelligence teams and specifically, how their efforts shape beliefs in organizations, is a possible avenue of future research. The findings outlined in this thesis provide preliminary understanding of the processes that regulate beliefs in organizations. However, the main limitation of this study was that the parties whose beliefs were challenged by the intelligence teams were not interviewed. Their accounts on how they experienced these events would have been essential in understanding how beliefs undergo change and future research should acknowledge this consideration.

Other scholars have stressed the importance of these issues: Tripsas and Gavetti (2000, p. 1158) raise the question of “how beliefs evolve within organizations” and Vuori and Huy (2016) state that there is insufficient understanding of the processes that would shape managerial beliefs. However, the findings of this study only dealt with processes at the lower levels of organizations, and it would be particularly important to investigate if such processes reach the level of top management. Top management does, after all, exert the greatest influence and control over organizational action.

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